# LSBR aims going forward

# Status

- I think you can see that we have made considerable progress since your last visit.
- LiX is starting to support a complex set of research themes.
- FMX is now ready to start exploring the world of micro-focused x-ray diffraction.
- AMX will soon be running in a highly automated fashion.
- Our imaging efforts start to be successful.
- All activities will require further development of the software & hardware.

# FMX and AMX goals

**First aim** will be to establish a strong consistent baseline of performance.

- We will deliver robust automation enabling the examination of circa 300 samples in a single dewar fill,
- this high density performance will be augmented as we roll out enhanced sample evaluation tools and data analysis software.

# **For FY18** the paths for FMX and AMX will diverge a little

- FMX will establish a structural biology program using the unique capabilities of the micro-beam delivered, priorities will follow the results of these measurements.
- For the AMX beamline the technical focus will shift to the full automation of the experiments including x-ray beam delivery, sample evaluation, and database driven data collection which will open opportunities for biomedical studies requiring the investigation of large numbers of samples, variables, and

# LiX goals

- the delivery of high performance solution scattering from proteins in solution and from an online purification system will be one of the principle scientific improvements of the beamline.
- These capabilities will be coupled with the development of the techniques for scanning scattering imaging that is showing such promise for the investigation of tissue materials.

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# For FY18 LiX

and we will continue to refine and develop the tools available for these types of measurement,

- improving data analysis and simplifying the user interface.
- Going beyond these capabilities we will explore the creation of new capabilities on the beamline, bringing into use anomlaous scattering measurements, grazing incidence measurements as well as improving the use of time resolved measurements

# Imaging in several forms…

- Further development of the sample holder, move to newer science and .
- Initiate further software development.
- Establish biological cases
- Understand the data – e.g. scanning scattering images.
- New modalities for imaging of biological materials.

# Outreach and information

- Aim to grow the community wanting to access the LSBR & NSLS-II facilities.
  - www.bnl.gov/ps/lsbr
  - Much work from Vivian and Gary Schroeder
  - BER supported community portal.
  - www.berstructuralbioportal.org
  - Neutron and lightsource resources are covered.
  - Workshops & “open-house” sessions for emergining communities.

# Critical issues to resolve

- Balance science and technology drivers to staff available.
- Provide consistent high quality support and service to the user community.
- Enable growth opportunities for the staff.
- Enable  new science opportunities to be recognized and acted on.
- Develop a sustainable business model for the future.
- Preparation for next proposal…